

DEC 31 1996

Beverly Neale
Helena Chemical Co.
6075 Poplar Avenue - Suite 500
Memphis, TN 38119

Dear Ms. Neale:

Subject: Revised Labeling
Copper-Z 6/2 Granular
EPA Registration No. 5905-524
Your Submission Dated November 19, 1996

The amendment referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended is acceptable provided that you:

1. Make the labeling changes listed below before you release the product for shipment bearing the amended labeling:

a. In the Precautionary Statements section delete "May cause skin sensitization in certain individuals". Our policy is that acute toxicity studies conducted on the end use formulation take precedence over tests conducted on the technical material. The Copper Sulfate Standard only addresses 99% Manufacturing Use Products for which we did require the dermal sensitization statement. However, the dermal sensitization study, MRID # 43271906, conducted with this product is negative; therefore, a dermal sensitization statement is not required on the labeling of this product.

b. In the Non-Agricultural Use Requirements section delete the statement "Unprotected persons may enter treated areas after application". It contradicts the 24 hour re-entry interval for the agricultural uses and is an implied safety claim. Since the only uses other than rice is aquatic application, you may want to add the following statement which appears on other copper aquatic herbicides:

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Aquatic areas treated with Copper-Z 6/2 Granular may be used for fishing, swimming, drinking and watering livestock immediately after treatment.

2. Submit one (1) copy of your final printed labeling before you release the product for shipment.

A stamped copy of the labeling is enclosed for your records.

Sincerely yours,



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Philip V. Errico
Acting Product Manager (22)
Fungicide-Herbicide Branch
Registration Division (7505C)

Enclosure.

EPA Stamped 1/17/96; Notification Submitted 7/3/96; Notification Submitted 8/22/96;
Notification 9/24/96, Amendment Submitted 11/19/96

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COPPER-Z 6/2 GRANULAR Algicide

ACTIVE INGREDIENT:	BY WT.
Copper Sulfate Pentahydrate*	23.70%
INERT INGREDIENTS:	76.30%
TOTAL	100.00%

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REC'D EPA/OPP/DPD1

*Copper (Cu) as metallic6%
One pound contains 0.06 lbs. of elemental copper and 0.02 lbs. of elemental zinc.

KEEP OUT OF REACH OF CHILDREN

DANGER - PELIGRO

Si usted no entiende la etiqueta, busque a alguien par que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

SEE SIDE PANELS FOR ADDITIONAL PRECAUTIONARY STATEMENTS

STATEMENT OF PRACTICAL TREATMENT

IF IN EYES: Hold eyelid open and flush with a steady, gentle stream of water for 15 minutes. Call a physician.

IF ON SKIN: Wash with plenty of soap and water. Get medical attention if irritation persists.

IF INHALED: Remove victim to fresh air. Get medical attention.

IF SWALLOWED: Drink immediately a large quantity of either milk, egg whites or gelatin solution. If these are not available drink a large quantity of water. Avoid alcohol. Do not induce vomiting or give anything by mouth to an unconcious person. Get medical attention. (NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate use of gastric lavage.)

EPA REG. NO.: 5905-524
EPA EST. NO.:

NET CONTENTS:

ACCEPTED
with **COMMENTS**
In EPA Letter Dated

DEC 31 1996

Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.

MANUFACTURED BY
HELENA CHEMICAL COMPANY
MEMPHIS, TN 38119

5905-524

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER

Corrosive. Causes irreversible eye damage. Harmful if swallowed. Do not get in eyes, on skin, or on clothing. May cause skin sensitization in certain individuals.

PERSONAL PROTECTIVE EQUIPMENT

Applicators and other handlers must wear:

Long-sleeved shirt and long pants

Waterproof gloves

Shoes plus socks

Protective eyewear

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

USER SAFETY RECOMMENDATIONS

Users should:

Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and aquatic organisms. For terrestrial uses, do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and runoff from treated areas may be hazardous to fish and aquatic organisms in adjacent aquatic sites. Direct application of copper sulfate to water may cause a significant reduction in populations of aquatic invertebrates, plants and fish. Do not treat more than one-half of lake or pond at one time in order to avoid depletion of oxygen levels from decaying vegetation. Allow 1 to 2 weeks between treatment for oxygen levels to recover. Do not apply this product in such a manner as to directly or through drift expose workers or other persons. The area being treated must be vacated by unprotected persons.

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Trout and other species of fish may be killed at application rates recommended on this label, especially in soft or acid waters. However, fish toxicity generally decreases when the hardness of water increases. Do not contaminate water by cleaning of equipment or disposal of wastes. Consult your State Fish and Game Agency before applying this product to public waters. Permits may be required before treating such waters.

PHYSICAL OR CHEMICAL HAZARDS

Do not use, pour, spill or store near heat or open flame.

CHEMIGATION PROHIBITION

Do not apply this product through any type of irrigation system.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Waterproof gloves
- Shoes plus socks
- Protective eyewear

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NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

During application, protective clothing, including goggles, should be worn. Unprotected persons may enter treated areas after application.

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STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

PESTICIDE DISPOSAL:

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance. Store in a cool, dry place in the original container. Do not store in a manner where cross contamination with other pesticides, fertilizers, food or feed could occur.

CONTAINER DISPOSAL:

Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

GENERAL DIRECTIONS

Copper-Z 6/2 Granular can be used to control algae in impounded waters, lakes, ponds and reservoirs and for algae and potomogeton pond weed control in potable water or irrigation conveyance systems.

Copper-Z 6/2 Granular effectively controls many species of both filamentous (mat forming green algae) and planktonic (single cell blue-green) algae. The rate of copper sulfate and control are affected by algae species, water hardness, water temperature, amount of algae present, as well as whether water is clear, turbid, flowing, or static. Preferable water should be clear and above 60° F, with treatment made in the late morning on a sunny day. Static water usually requires less copper sulfate than flowing water. The harder the water, the higher the required rate of copper sulfate. When mats of filamentous algae are floating, the surface of these mats should be sprayed. Algae will absorb the copper sulfate within hours after treatment, and death should be evident within 3 to 5 days. If there is some doubt about the concentration to apply, it is generally best to begin with a lower rate and increase the rate until the algae are killed. (A few algae species are resistant to copper sulfate treatment and may not be killed). Repeat treatments may be needed to keep algae under control to the desired levels.

Treatment of algae can result in oxygen loss from the water caused by the decay of dead algae. This loss can cause fish suffocation. To minimize this hazard, treat 1/3 to 1/2 of the water area in a single operation and wait 10 to 14 days between treatments. Begin treatments along the shore and proceed outwards in bands to allow fish to move into untreated water. Trout and other species of fish may be killed at applica-

tion rates recommended on this label, especially in soft and acid waters.

1. For Algae Control in Reservoirs, Lakes, Ponds, Impounded Waters:

When to apply: Early treatment is essential for most satisfactory algae control at the lowest rate levels. Early growth is usually confined to shallower shore areas. Begin treatment when not over 5 to 10% of the water surface area is covered with algae growths which is usually nearest the shoreline. Delaying treatment until heavy algae growths are present usually requires a higher rate and may result in fish distress or death since rapid decomposition of heavy growths greatly reduces the oxygen content of the water. Several repeat treatments are necessary to control algae each season.

Rates to Control Algae: First, accurately determine the surface acres of water to be treated at one time and multiply this by the average depth in feet of this water area to determine the acre feet of water to be treated. [One acre foot = one surface acre (43,560 sq. ft.) x one foot depth.]

Each acre foot of water contains 326,000 gallons, or 2,720,000 pounds of water. Since recommended concentrations are normally given in parts per million (ppm), it will first be necessary to convert the value in parts per million to a decimal equivalent. For example, 2 ppm is the same as 0.000002 when used in this calculation. Therefore, to calculate the amount of Copper Sulfate Pentahydrate to treat 1 acre-foot of water with 2 ppm Copper Sulfate, the calculation would be as follows:

0.000002 x 2,720,000 = 5.44 lbs. Copper Sulfate Pentahydrate.
To obtain the correct amount of Copper-Z 6/2 Granular, divide 5.44 lbs. by 0.2370 lbs. which equals 23 lbs. of Copper-Z 6/2 Granular. The rates of Copper-Z 6/2 Granular per acre foot of water to control specific algae species are given later in the label.

Secondly, if the problem algae genera is known, use the table below and its equivalence to determine the approximate rate of this product needed to control that genera. If the genera of either filamentous or planktonic algae is not known, apply 10.9-16.3 pounds of this product per acre foot of water, using the lower rate in soft water and the higher rate to hard water. For control of bottom-attached algae Chara and Nitetella use 16.3-22.5 pounds of Copper-Z 6/2 Granular per acre foot of water to be treated. If control is not achieved or in very adverse waters, a higher rate may be needed, but consider the fish species.

COPPER SULFATE REQUIRED FOR TREATMENT OF DIFFERENT GENERA OF ALGAE

The genera of algae listed below are commonly found in waters of the United States. Use the lower recommended rate in soft waters (less than 50 ppm methyl orange alkalinity) and the higher concentration in hard water (above 50 ppm alkalinity). Always consult State Fish and Game Agency before applying this product in municipal water.

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PPMEQUIVALENT OF COPPER-Z 6/2 GRANULAR PER ACRE FOOT OF WATER

	2.8-5.8 lbs.	5.8-10.9 lbs.	10.9-16.3 lbs.	16.3-22.5 lbs.
ORGANISM	1/4 to 1/2 ppm*	1/2 to 1 ppm*	1 to 1 1/2 ppm*	1 1/2 to 2 ppm*
<i>Cyanophyceae</i> (Blue-green)	Anabaena Anacystis Aphanizomenon Gloeotrichia Gomphosphaeria Polycystis Rivularia	Cylindrospermum Oscillatoris Plectonema	Nostoc Phormidium	Calothrix Symploca
<i>Chlorophyceae</i> (Green)	Closterium Hydrodictyon Spirogyra Ulothrix	Botryococcus Cladophora Coelastrum Draparnaldia Enteromorpha Gloeocystis Microspora Tribonema Zygnema	Chlorella Crucigenia Desmidium Golenkinia Oocystis Palmella Pithophora Staurastrum Tetraedron	Ankistrodesmus Chara Nitella Scenedesmus
<i>Diatomaceae</i> (Diatoms)	Asterionella Fragilaria Melosira Navicula	Gomphonema Nitzschia Stephanodiscus Synedra Tabellaria	Achnanthes Cymbella Neidium	
<i>Protozoa</i> (Flagellates)	Dinobryon Synura Uroglena Volvox	Ceratium Cryptomonas Euglena Glenodinium Mallomonas	Chlamydomonas Hawmatococcus Peridinium	Eudorina Pandorina

How to apply Copper-Z 6/2 Granular: Apply the recommended amount of this product to thoroughly and uniformly cover the water surface including any floating algae mats.

2. Algae Control and the potomogeton Pond Weeds, Leafy and Sago, in irrigation and Potable Water Conveyance Systems: Accurately determine the water flow rate in Cubic Feet per Second (C.F.S.) or gallons per minute (Gal/Min). One CFS equals 450 Gal/Min. The calculation of water flow in ditches, streams and irrigation device can be found by means of either the Continuous or Slug application method. Copper sulfate becomes less effective as the biocarbonate alkalinity increases and is significantly reduced when the biocarbonate alkalinity exceeds about 150 ppm as CaCO₃ regardless if applied by either of the following methods. For Potable Water Systems, the amount of Copper Sulfate Pentahydrate applied should not exceed 4 ppm, which is an equivalent copper concentration of 1 ppm in the treated water.

For Algae Control by the Continuous Application Method, begin treatment when water is first turned into the system and continue until water flow is stopped, applying 0.4-0.9 lbs. (0.28-

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0.57 oz./hr./CFS) per CFS of water during each 24 hours. For Leafy and Sago Pondweed Control, continuously apply 6.1-8.4 lbs. per CFS (0.25-0.35 oz./hr./CFS) of water during each 24 hours. Should copper sulfate fail to control pond weeds satisfactorily, it may be necessary to treat the ditch with either a suitable approved herbicide or use mechanical means to remove the excess growth. In either case resume copper sulfate addition as soon as possible.

For Algae Control using the Slug Application Method, apply 1.2-8.4 lbs. per CFS of water per treatment. Repeat about every 2 weeks as needed. A slug is usually necessary every 5 to 30 miles depending on water hardness, alkalinity, and algae concentration.

3. Algae Control in Rice Fields: Apply 44.3-64.0 lbs. Copper-Z 6/2 Granular per acre to the water surface as a surface spray. Application should be made when the algae has formed on the soil surface but prior to rising of the water surface. Apply higher rate (64.0 lbs.) in water of 6 inches or greater.
4. Tadpole Shrimp Control in Rice Fields: Apply 21.8-44.3 lbs. of Copper-Z 6/2 Granular per acre to the flooded field at any time the pest appears between planting time and until the seedlings are rooted and have emerged through the water surface. The lower rate should be used when the water depth and flow rate are minimal and higher rate should be used when the water depth and flow are at a maximum.

**CONDITIONS OF SALE - LIMITED WARRANTY
AND LIMITATIONS OF LIABILITY AND REMEDIES**

The directions on this label are believed to be reliable and should be followed carefully. Insufficient control of pests and/or injury to the crop to which the product is applied may result from the occurrence of extraordinary or unusual weather conditions, the failure to follow the label directions, or good application practices, all of which are beyond the control of Helena Chemical Company (the "Company") or seller. In addition, failure to follow label directions may cause injury to crops, animals, man, or the environment. The Company warrants that this product conforms to the chemical description on the label and is reasonably fit for the purpose referred to in the directions for use subject to the factors noted above which are beyond the control of the Company. The Company makes no other warranties or representations of any kind, express or implied, concerning the product, including no implied warranty of merchantability or fitness for any particular purpose, and no such warranty shall be implied by law.

The exclusive remedy against the Company for any cause of action relating to the handling or use of this product is a claim for damage and in no event shall damages or any other recovery of any kind against the Company exceed the price of the product which causes the alleged loss, damage, injury, or other claim. The Company shall not be liable and any and all claims against the Company are waived for special, indirect, incidental, or consequential damages or expense of any nature, including, but not limited to, loss of profits or income.

The Company and the seller offer this product and the buyer and user accept it, subject to the foregoing conditions of sale and limitation of warranty, liability, and remedies.

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